

# Elon Musk Is Really Boring

**The billionaire visionary is digging in on a tunnel project to skirt gridlock. His Trump-era infrastructure plan has a hole in it.**



The SpaceX parking lot near LAX.

Photographer: Ewan Telford for Bloomberg Businessweek

by **Max Chafkin**

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**The pit is at least 15 feet deep and more than 50 feet wide. It's in a nondescript lot at Crenshaw Boulevard and West 120th Street, not far from Los Angeles International Airport. If not for the huge pile of dirt next to it, you'd never know it was there. Seen from the top of the parking garage at SpaceX, the aerospace startup founded by Elon Musk, the hole is an eyesore among eyesores—a crater in asphalt, fenced in by rusty-looking steel plates.**

But Musk, the chief executive of both SpaceX and the electric car company Tesla, is quite proud of this pit. He started digging as a spur-of-the-moment thing one weekend at the end of January. The idea came to him while sitting in a traffic jam early on a Saturday morning in December. “Traffic is driving me nuts,” he tweeted. “Am going to build a tunnel boring machine and just start digging.” Within an hour, the project had a name and a marketing platform. “It shall be called ‘The Boring Company,’ ” he wrote. “Boring, it’s what we do.” Two hours passed, and Musk tweeted again: “I am actually going to do this.”



**Elon Musk**   
@elonmusk

Traffic is driving me nuts. Am going to build a tunnel boring machine and just start digging...

5:05 AM - 17 Dec 2016

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It sounded like a put-on. Musk is a serious person, but he can also be something of a loose cannon, making outlandish statements designed to troll the press or simply amuse himself. In a 2015 interview with Stephen Colbert he semi-seriously endorsed dropping nuclear weapons on Mars; last year he implied on Twitter that he’s developing an *Iron Man*-style flying suit for the Pentagon. Most reporters assumed that the tunnel thing was another one of his jokes.

Musk wasn’t joking. At least that’s what he tells me as we sit in the SpaceX offices in Washington. For years he’s been thinking about tunnels—both out of a personal fascination and because they’d be an important component of the Hyperloop, the

fanciful high-speed rail system he proposed in 2013. All the while he's been quietly encouraging anyone who asks him about new business opportunities to consider digging for a living. "I think they were hoping I'd say some sort of iPhone app that they could make," he says with a smile. "I would just say, 'Do tunnels.' It would obviously solve urban congestion—and we wouldn't be stuck in soul-destroying traffic all the time."

As Musk tells it, the L.A. traffic jam was a breaking point. Screw it, he thought, I'll do tunnels myself. Within days of his tweetstorm, he acquired a domain name—[BoringCompany.com](http://BoringCompany.com)—and appointed a leader for the project, Steve Davis, a senior SpaceX engineer who designed the guidance systems for the company's first rocket. The barely sketched plan was to dig lots of tunnels for cars and high-speed trains. Mostly, Musk was going to approach it in his usual way: He'd figure it out as he went along.

One of the advantages of running two large industrial companies is that you can secure earth-moving equipment on short notice. And so, around noon on a Friday in January, an excavation crew started digging. "I was like, 'Hey, what's the biggest hole we can make by Sunday evening?'" Musk says.

**Shortly after the 2016 election, Steve Bannon, Donald Trump's chief** strategist, implied that the incoming administration would pursue infrastructure with a fervor not seen since the New Deal. "The conservatives are going to go crazy," he told the *Hollywood Reporter*. "I'm the guy pushing a trillion-dollar infrastructure plan. With negative interest rates throughout the world, it's the greatest opportunity to rebuild everything. Shipyards, ironworks, get them all jacked up. We're just going to throw it up against the wall and see if it sticks." On Inauguration Day, Trump promised "new roads and highways, and bridges, and airports, and tunnels, and railways all across our wonderful nation."

Like the Boring Company itself, Trump's big-league construction agenda seems a little half-baked, but the possibility has already prompted private equity firms such as Blackstone and Carlyle to plan big infrastructure investments. "Infrastructure is at an inflection moment in the United States, where both parties agree on that one thing,"

said Joe Baratta, Blackstone's global head of private equity, during a Bloomberg TV interview in late January. He said his firm would raise as much as \$40 billion for the efforts.



The billionaire's new  
Trump-era business plan:  
Building tunnels

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Musk wouldn't seem to be in a particularly good ideological position to benefit from Trump's infrastructure largesse. He's a climate change hawk who was so closely identified with the Obama administration that Mitt Romney attacked Tesla during the 2012 debates. (Tesla had received a government-guaranteed loan in 2010.) In the next presidential election, Musk supported Hillary Clinton for president, describing Trump, in an [interview with CNBC](#), as a man who "doesn't seem to have the sort of character that reflects well on the United States."

But after the election, Musk made several trips to Trump Tower, impressing the president and, especially, Bannon. A former Goldman Sachs banker, Bannon is the main proponent of Trump's "America First" economic nationalism. After meeting privately with Musk on Jan. 6, Bannon told an associate that he views Musk and his companies as embodying the kind of U.S.-based job growth that Trump intends to foster. For Trump, who's been publicly [shunned](#) by many Silicon Valley executives, the connection to Musk gives his administration a whiff of innovation and dynamism. In December, Musk was named to Trump's Strategy and Policy Forum, an advisory group that includes IBM's Ginni Rometty, Pepsi's Indra Nooyi, and JPMorgan Chase's Jamie Dimon.

Musk has warmed to Trump, too. In January he offered his support for Trump's chosen secretary of state, former ExxonMobil CEO Rex Tillerson, despite having frequently criticized oil companies in the past. "This may sound surprising coming from me," Musk [wrote on Twitter](#), but "Rex Tillerson has the potential to be an excellent Sec of State." He noted that Tillerson has expressed openness to a carbon tax, a policy Musk has [long supported](#). After Trump issued a temporary ban on immigration from seven Muslim-majority countries, Musk criticized the order but also [urged](#) his many left-leaning followers to read its full text before freaking out.

Whereas Uber CEO Travis Kalanick left the Strategy and Policy Forum [in response to protests](#), Musk is sticking with it. "Attending does not mean I agree with actions by the

administration,” he wrote in a statement. “I believe at this time that engaging on critical issues will on balance serve the greater good.”

**Our conversation at SpaceX takes place a few hours after his Feb. 3** meeting with Trump. Musk is attired in his strategy-forum best—black suit, white shirt, blue tie—and seems sleep-deprived and loopy as he deflects my question about Trump and changes the subject to the Boring Company, launching into what I can best describe as a tunnel-themed comedy routine.

“My other idea was to call it Tunnels R Us and to essentially troll Toys “R” Us into filing a lawsuit,” he says, letting out a loud and well-articulated ha-ha-ha-ha. “Now we’ve decided to troll AT&T instead! We’re going to call it American Tubes and Tunnels.”

When I ask him if the tunnel venture will be a subsidiary of SpaceX or an independent company, he responds cryptically. “Don’t you read my Twitter? The Boring Company. Or TBC. To Be Continued.” An aide chimes in: Yes, the Boring Company, aka To Be Continued, aka Tunnels R Us, aka American Tubes and Tunnels, aka whatever, will indeed be an independent company.

The Boring Company has no full-time employees yet, nor does it have a clear business model, though government contracts will almost certainly play a role. Musk says the tunneling business is a bit like the aerospace industry, which he shook up by starting SpaceX in 2002. Rockets hadn’t changed much since the Apollo program, and research projects were slow and expensive. SpaceX differentiated itself by offering low, fixed-price launches, eventually winning a \$1.6 billion contract from NASA to run supply missions to the International Space Station.

Tunnel technology is older than rockets, and boring speeds are pretty much what they were 50 years ago. As with space launches, tunnels are often funded through cost-plus

government contracts, in which the contractor assumes no risk for cost overruns, which tend to be enormous as a result. Famously, Boston's Big Dig, which moved a section of Interstate 93 underground, was delayed by roughly eight years and cost \$12 billion more than originally planned, but all tunnels tend to be wildly expensive. In L.A., plans to extend the subway's Purple Line by 2.6 miles will cost more than \$2.4 billion and take almost 10 years. "It's basically a billion dollars a mile," Musk says. "That's crazy."

Musk wouldn't comment on Trump, but a person close to him says that while the Boring Company would be open to building tunnels as part of Trump's infrastructure plan, it intends to move forward regardless of what happens in Washington. Musk says he hopes to build a much faster tunneling machine and use it to dig thousands of miles, eventually creating a vast underground network that includes as many as 30 levels of tunnels for cars and high-speed trains such as the Hyperloop.

Objections spring to mind. Such as: Wouldn't having hundreds of feet of hollow tunnels destabilize the ground? Nope, Musk says, the mining industry does it all the time. "The earth is big, and we are small," he says. "We are so f---ing small you cannot believe it." Not only are these megatunnels possible, he argues, they're the only way we can rid ourselves of the scourge of traffic.

"We have skyscrapers with all these levels, and we have a flat, two-dimensional road system," he says. "When everyone decides to go into these structures and then exits them at the same time, you're going to get jammed." Tunnels, on the other hand, would represent a 3D transportation network.

Musk chose the SpaceX parking lot as the site of his first dig, mostly because it was convenient and he could legally do so without city permits. The plan is to expand the current hole into a ramp designed for a large tunnel boring machine and then start digging horizontally once the machine is 50 feet or so below ground, which would make it low enough to clear gas and sewer lines and to be undetectable at the surface. The company, such as it is, is working on securing permits and hopes to have them by the time the tunnel hits the property line. At the moment, Musk won't say exactly where this "demo tunnel," as he calls it, will lead—only that it will accommodate cars and be the very beginning of a vast underground transportation network.

As crazy as tunneling sounds, Musk points out that it's arguably less crazy than Silicon Valley's go-to traffic solution: flying cars. Google's Larry Page has funded two personal-aircraft startups, Zee.Aero and Kitty Hawk, and companies such as Uber and Airbus have skunk works. But Musk thinks flying cars are a dumb idea, at least for city travel. "Obviously, I like flying things," he says. "But it's difficult to imagine the flying car becoming a scalable solution." As long as the laws of physics hold, he explains, any flying car will need to generate a lot of downward force to stop it from falling out of the sky, which means wind and noise for those on the ground, not to mention debris from midair fender-benders. "If somebody doesn't maintain their flying car, it could drop a hubcap and guillotine you," he says. "Your anxiety level will not decrease as a result of things that weigh a lot buzzing around your head."

Eventually the aide says it's time for me to ask my last question. But Musk isn't done. He pulls off his tie, lays it on the table, and looks at me seriously. "You want to come see

it?" he asks.

## **"Holy shit. Holy shit! Ha-ha-ha-ha!"**

By now the sun is low, and Musk, SpaceX's Davis, and I are dangling 20 stories in the air, on a large steel platform surrounded by a railing. The "man basket," as it's known in the construction business, is being lowered by an enormous crane into a 100-foot-deep shaft not far from the baseball stadium where the Washington Nationals play. I'm freezing and terrified. Musk, with a wide, open-mouthed smile, stares down into the darkness. He wears a safety harness, a hard hat, and knee-high muck boots over the suit he wore when he met the president.

"Holy shit," he says again as we step into several inches of sloppy mud. "This is cool." It's his first time seeing a tunnel-boring machine up close.

Musk has brought me to the site of a municipal project to kick the cutting wheels, so to speak, on a used boring machine he's considering. The machine is 26 feet in diameter, about 400 feet long, weighs 1,200 tons, and is nicknamed Nannie. It's been used by Washington's water utility to dig a tunnel to prevent sewage from overflowing into the Anacostia River. New machines normally cost at least \$15 million, but a decade of frantic subway construction in China has created a glut, and lightly used models can be had for 90 percent off sticker.

Nannie, made by the German company Herrenknecht, has been digging only since 2015, but it looks ancient, its surfaces scaled by rust or caked in mud. Although the head looks as you'd expect—like a giant power drill—most of the work happens in the back, where conveyor belts transport mud to the surface, hydraulic pistons brace the wall, and small, narrow-gauge trains haul sections of precast concrete rings to line the tunnel. There are also systems to bring in grout and various foams as well as enormous ducts to pump out exhaust and bring in enough clean air for Nannie's crew of 15 or so. “This is like an ecosystem,” says Musk.

He plans to use a machine like this to test improvements in tunneling technology. He thinks that with more power, better materials, and a design that allows it to continue digging while installing the tunnel walls—a feat that's impossible today—the Boring Company will be able to drastically reduce the price of digging. “To make it a little better should be easy,” he says. “To make it five times better is not crazy hard. To make it 10 times better is hard, but nobody will need to win a Nobel Prize. We don't have to change the standard model of physics.”

As we walk through the machine, Musk and Davis pepper the tunnel's project manager, Shane Yanagisawa, with questions. They ask about grouting materials and staffing, but mostly about speed. Yanagisawa says the limiting factor is muck. Nannie's conveyor belts can carry only so much dirt at a time. The fastest he thinks the machine can possibly run is 75 millimeters per minute. In a typical week, it moves through 300 feet of clay.

Musk nods. “We're trying to dramatically increase the tunneling speed,” he says. “We

want to know what it would take to get to a mile a week? Could it be possible?"

"Wow," says Yanagisawa, taken aback.

As Musk puts on his harness and steps back into the man basket for the return trip, he seems only slightly discouraged. "It may make sense to start with something smaller," he says. "But I think we can simplify this a lot."

As any longtime resident of Boston can tell you, tunneling tends to resist optimism. The average bridge or tunnel project costs 32 percent more and takes 22 percent more time than expected, according to Bent Flyvbjerg, a professor at Oxford's Saïd Business School who studies large-scale infrastructure. The process is slow in part because the machines inevitably bump into unforeseen obstacles, such as boulders. "No matter how many tests you do, how many samples you take, you can't know exactly what you're drilling into," Flyvbjerg says.

Even so, Flyvbjerg is enthusiastic about Musk's plan. "I wouldn't just laugh it off," he says. He thinks that Musk can speed up tunneling just by doing some simple things, such as having enough spare parts on-site to avoid long waits for repairs. "The construction industry really needs disruption," he says. "It's the only sector of the economy that hasn't improved its productivity in the last 50 years." Musk, he notes, "has a long track record of disruption."

This confidence doesn't so much stem from anything Musk has said about tunnels, nor from any special tunnel expertise he possesses (i.e., none). Rather, it's a handicapping of Musk himself: a guy with an uncanny ability to recruit smart people to wildly risky causes, while finding ways to make these causes—the colonization of Mars, an electric car that's faster than a Ferrari—seem achievable rather than ridiculous. SpaceX's cheap rockets were perfectly tailored to an effort undertaken by NASA starting in 2004 to privatize missions to the International Space Station; Tesla's growth was spurred by a tax credit for buyers of electric cars. Both of these policies were created by the George W. Bush administration, then embraced by Barack Obama.

Musk rarely talked about the job-creating potential of his endeavors during those years,

focusing instead on the advantages of electric cars over gas-powered ones and on the sheer awesomeness of space travel. “People are mentioning jobs more these days,” he tells me. “But I sort of take it for granted that if you solve problems, then it takes people to solve them.”

Lately, he’s been more explicit about the economic impact of his work. “My goals,” he recently tweeted in defense of his relationship with Trump, “are to accelerate the world’s transition to sustainable energy and to help make humanity a multi-planet civilization, a consequence of which will be the creating of hundreds of thousands of jobs and a more inspiring future for all.”

Musk might be an environmentalist, and Trump might believe climate change is a Chinese hoax, but Musk’s companies employ 35,000 people, many of them working the very sorts of manufacturing jobs that Trump says are key to America’s future. Last year, Tesla began operations at its Reno, Nev.-based Gigafactory, which will eventually be the largest battery plant in the world. SolarCity, the solar panel company that Musk helped start and which recently merged with Tesla, opened a 1.2 million-square-foot factory in upstate New York.

The Boring Company, Musk suggests, is a natural extension of this: “It would certainly create a lot of jobs.” Then he smirks. “A trillion jobs,” he says. “With a T.”

—*With Joshua Green*



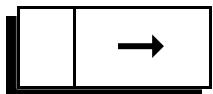
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